



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------|-------------|----------------------|---------------------|------------------|
| 10/729,989 | 12/09/2003 | Jin-Woo Park | 61610112US | 2761 |
| 58027 | 7590 | 03/20/2006 | EXAMINER | |
| H.C. PARK & ASSOCIATES, PLC | | | ROY, SIKHA | |
| 8500 LEESBURG PIKE | | | ART UNIT | |
| SUITE 7500 | | | PAPER NUMBER | |
| VIENNA, VA 22182 | | | 2879 | |

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/729,989

Applicant(s)

PARK ET AL.

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 26-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/9/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I claims 1-25 in the reply filed on January 12, 2006 is acknowledged. The traversal is on the ground(s) that search and examination of the entire application could be made without serious burden. This is not found persuasive because the two groups would require divergent search as evidenced by their different classification.

The requirement is still deemed proper and is therefore made FINAL.

Claims 26-33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Group II, there being no allowable generic or linking claim.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Korea on April 12, 2003. It is noted, however, that applicant has not filed a certified copy of the priority application as required by 35 U.S.C. 119(b).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the 'inorganic protection layer provided on the second electrode' as claimed in claims 8,9 and 20, 21

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of copending Application No. 10/920,243. Although the conflicting claims are not identical, they are not patentably distinct from each other because both claim 1 of the instant application and claim 2 of Application No. 10/920,243 claim organic electroluminescent display comprising organic EL portion formed between two substrates and a transparent moisture-absorbing layer coated on the surface of the second substrate.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2879

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,800,350 to Van Hal et al.

Regarding claim 1 Van Hal et al. discloses (Fig. 1 column 3 lines 1-15, column 4 lines 15-45) an organic EL display comprising a rear substrate 2 an organic EL portion formed on the surface of a rear substrate and having a first electrode 4, an organic layer (active layer) 3 and a second electrode 5 and a front substrate 7 coupled to the rear substrate 2 at an internal surface of the rear substrate to seal an internal space 8 and a moisture absorbing layer 9 made of silica gel (molecular sieve powder) coated on internal surface of the front substrate. The Examiner notes that it is well known in the art that porous silica gel/silica aerogels are transparent.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 –5, 8, 9,11-17, 20, 21 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,803,127 to Su et al., and further in view of U.S. Patent 5,321,102 to Loy et al.

Regarding claim 1 Su discloses (Fig.3 column 3 lines 35-67) an organic EL display device comprising a rear substrate 42, an organic EL portion 48 formed on the surface of the rear substrate 42 and having a first electrode 45, an organic layer 47 and a second electrode 49 sequentially laminated, a front substrate 46 coupled to the rear substrate 42 at an internal surface of the front substrate to seal an internal space 52 in which the organic EL portion is accommodated thereby isolating the organic EL portion 48 from outside and a moisture-absorbing layer 50I coated on the internal surface of the front substrate 46.

Claim 1 differs from Su in that Su does not exemplify the moisture absorbing layer being transparent.

Loy in pertinent art discloses (column 1 lines 21,22, column 2 line 65 through column 3 line 5) use of porous silica material as desiccating water from closed packages. Loy further teaches this porous silica acts as a high surface area desiccant and can be formed into thin films. The Examiner notes that it is well known in the art that porous silica gel/ silica aerogels are transparent.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the moisture-absorbing layer of Su by the transparent silica gel as taught by Loy for providing excellent desiccation in the display with high surface area and hence enhancing the operating life.

Regarding claim 2 Su in view of Loy discloses the moisture-absorbing layer having plurality of absorption holes.

Regarding claim 3 Loy discloses (claim 9) the plurality of absorption holes having diameter less than 2 nm.

Regarding claim 4 Su discloses (column 3 line 66,67) the moisture absorption layer having thickness of less than 10 μm .

Regarding claim 5 Loy discloses (claim 9) the plurality of absorption holes having diameter less than 2nm.

Regarding claims 8 and 9 Su discloses (Fig. 3 column 3 lines 55-67) another inorganic protection layer 50II made of metal oxides provided on the second electrode.

Regarding claim 11 Su discloses (column 1 lines 54-61) the internal space defined by the front and rear substrate is filled with dried inert gas.

Regarding claim 12 Su discloses (column 3 lines 45-47) the front substrate 46 is made of glass.

Regarding claim 13 Su discloses (Fig.3) a protection layer 50I for protecting front substrate is formed on internal surface of the front substrate.

Regarding claim 14 Su and Loy disclose all the limitations same as of claim 1 and additionally disclose the moisture absorbing layer coated on the internal surface of the front substrate is made of porous silica layer with a plurality of absorption holes.

Claims 15-17 essentially recite the same limitations as of claims 4-6 respectively and hence are rejected for the same reasons (see rejection of claims 4-6).

Claims 20,21 and 23-25 essentially recite the same limitations as of claims 8,9 and 11-13 respectively and hence are rejected for the same reasons (see rejection of claims 8,9,11-13).

Claims 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,803,127 to Su et al. and U.S. Patent 5,321,102 to Loy et al.

Regarding claim 10 Su discloses (column 2 lines 25,26) the space between the rear and front substrate is sealed and formed air tight. It would have been obvious to specify the space defined between the rear and front substrates being vacuum so that there is no generation of impurities in the space reacting with the organic EL portion thus preventing formation of dark spots and resulting in prolonged active life of the display.

Claims 6, 7 and 18,19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,803,127 to Su et al., U.S. Patent 5,321,102 to Loy et al. and further in view of U.S. Patent 6,762,553 to Yokogawa et al.

Regarding claim 6 Su and Loy are silent about the first electrode being transparent and second electrode being reflection type.

Yokogawa in analogous art discloses (Fig. 11 column 1 lines 34-46) an EL layer 13 sandwiched between a first transparent electrode 12 and a back metal electrode 14 made of reflecting aluminum formed on glass plate 11. Yamada discloses this structure

is a basic structure and used for EL device where light emission takes place from the bottom glass plate.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to employ the basic structure for the laminated EL portion of Su and Loy as disclosed by Yokogawa for having a display with light emission taking place from the bottom substrate.

Regarding claim 7 Su and Loy are silent about the first electrode being reflection type and the second electrode transparent.

It would have been obvious to form electrode stack in a reverse order so that the bottom electrode is reflecting and top electrode is transparent of the EL portion of Su, Loy and Yokogawa for having a display with light emission from the top substrate.

Claims 18 and 19 essentially recite the same limitations as of claims 6,7 respectively and hence are rejected for the same reason.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 4,402,927 to Von Dardel et al. and U.S. Patent 6,709,806 to Hotta et al. discloses (column 11 lines 39-43) silica aerogel has high porosity and is excellent in transparency. U.S. Patent 5,124,204 to Yamashita et al. and U.S. Patent 5,689,151 to Wallace et al. discloses porous silica aerogels with high surface area low density used as moisture absorbing material.

Art Unit: 2879

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sikha Roy

Sikha Roy
Patent Examiner
Art Unit 2879